

IEE1711 Applied signal processing

Exercise 4

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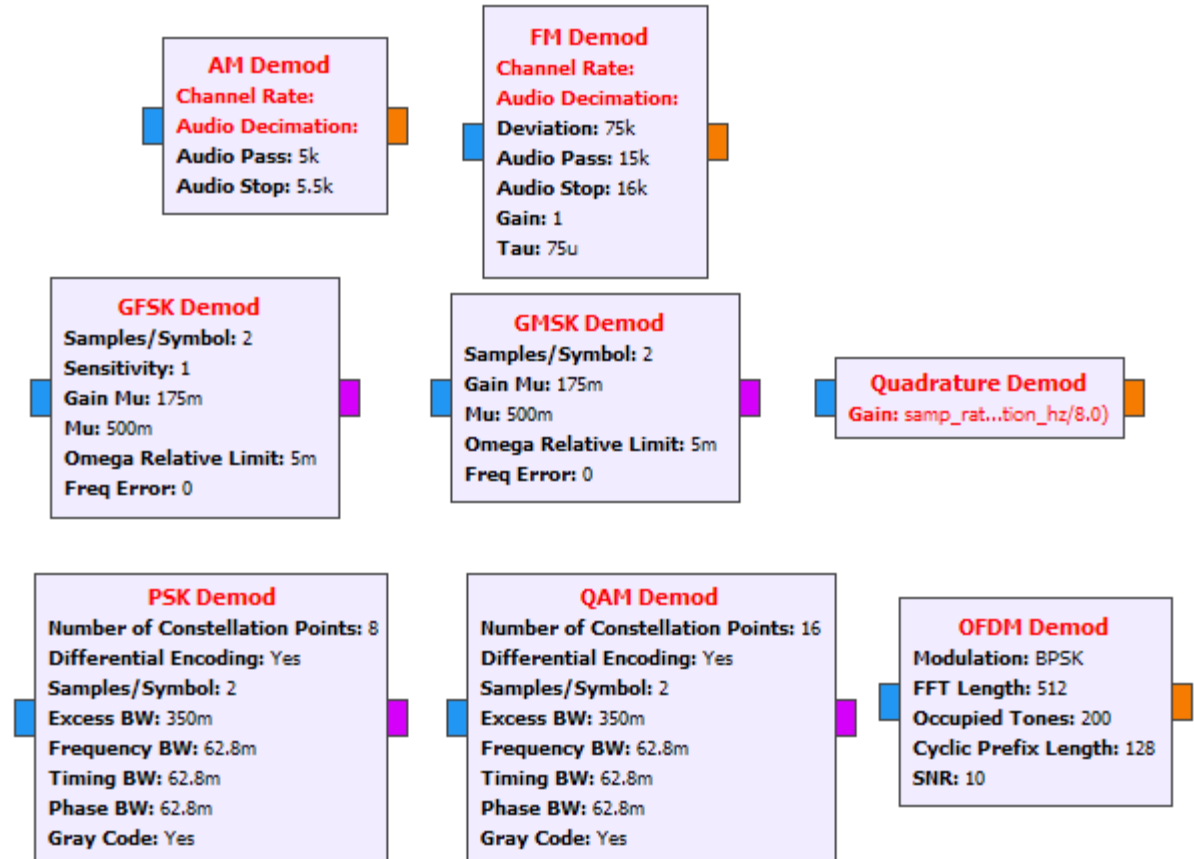
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Receiver design (GNURadio/Matlab)

- Treshold
- Demodulators:
 - AM demodulator
 - FM demodulator
 - Quadrature (FSK) demodulator
 - GMSK demodulator
 - GFSK demodulator
 - QAM demodulator
 - PSK demodulator

GNURadio demodulators

- ▼ acars2
 - ACARS demod
- ▼ lte
 - QPSK soft demod
- ▼ Core
 - ▼ Modulators
 - AM Demod
 - FM Demod
 - Quadrature Demod
 - GFSK Demod
 - GMSK Demod
 - ▼ Deprecated
 - DPSK Demod
 - PSK Demod
 - QAM Demod
 - ▼ OFDM
 - OFDM Demod
 - ▼ Digital Television
 - ▼ DVB-T
 - Demod Reference Signals



Matlab demodulators

- Passband / Baseband

Modulation

Analog and digital modulation

Communications Toolbox™ provides digital baseband, analog passband, and analog baseband modulation and demodulation capabilities.

Digital Baseband Modulation

Baseband digital modulation

Analog Baseband Modulation

FM analog baseband modulation

Analog Passband Modulation

AM and FM analog passband modulation

- Coherent / Non-coherent

<https://www.mathworks.com/help/comm/modulation.html>

Matlab demodulators

Functions

- > Amplitude Modulation
- > Amplitude and Phase Modulation
- > Continuous Phase Modulation
- > Frequency Modulation
- > OFDM Modulation
- > Phase Modulation

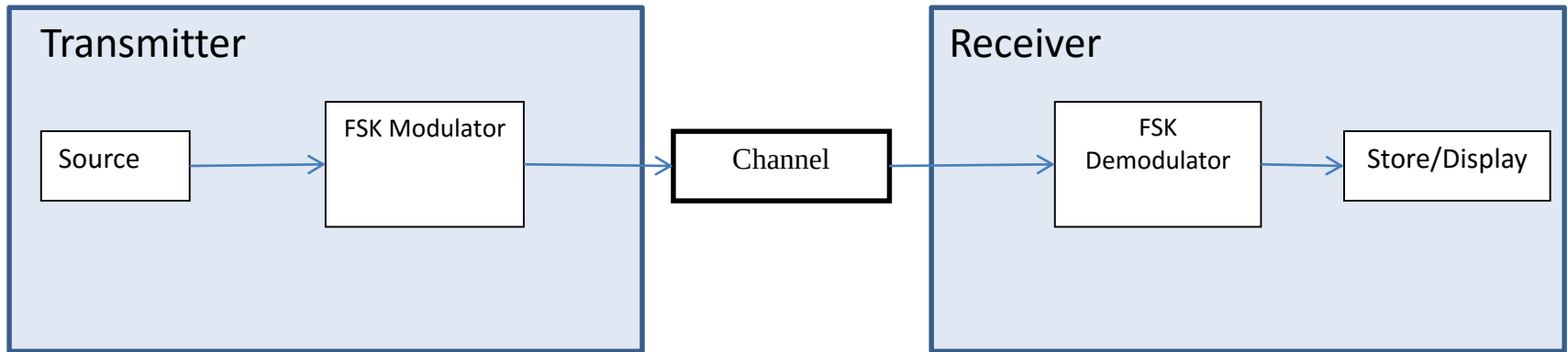
Exercise 1: FSK demodulator (baseband)

- Run Matlab FSK demodulator example

<https://www.mathworks.com/help/comm/ref/fskdemod.html>

- Change signal to noise ratio and calculate BER

Basic model for FSK Modulator/Demodulator



Exercise 2: GNURadio model for FSK modulaator/demodulator

- <https://stackoverflow.com/questions/36898574/fsk-demodulation-with-gnu-radio>

